

## **STATEMENT OF BASIS**

3M Company  
Decatur, Alabama  
Morgan County  
712-0009

This proposed renewal of the Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code R. 335-3-16. The above-named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

This facility is a fluorocarbon, resins, films, and industrial chemical plant that is located on 1400 State Docks Road in Decatur, Alabama. Based upon the Title V application, this facility is a major source for nitrogen oxides (NO<sub>x</sub>), particulate matter (PM), volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and greenhouse gases (GHGs). The facility is a major source for the Prevention of Significant Deterioration (PSD) for the applicable pollutants under PSD. Also, all other emissions, including the criteria pollutants, are less than the major source threshold of 100 tons per year.

Compliance Assurance Monitoring (CAM) is not applicable for this proposed permit for these sources.

Although the facility is a major source of Greenhouse Gas (GHG) emissions, there are no emission standards for GHG to which the facility is subject.

The Title V Major source Operating Permit renewal will also incorporate equipment covered by Air Permits that have been issued to 3M since the last issuance. The Air Permits that are being incorporated into the Title V are the following:

X071 Building 74 and 75 Resin Line  
X103 Building 14 Emergency Engine (364 bhp)

The facility is manned 8,760 hours per year. The following describes the process and the proposed periodic monitoring for the sources affected by this proposed permit.

Each of the significant emission units is described below:

#### **OPERATING SUMMARY NO. 1**

**Emission Unit 020: 53.5 MMBTU/HR NATURAL GAS, NO. 2, AND NO. 6 FUEL OIL FIRED BOILER (BOILER #1)**

**Emission Unit 001: 90 MMBTU/HR NATURAL GAS, NO. 2 AND NO 6 FUEL OIL FIRED BOILER (BOILER #3)**

Boilers #1 and #3 may utilize natural gas, No. 2 fuel oil, and No. 6 fuel oil as fuel. These boilers are not subject to the New Source Performance Standard (NSPS) 40 CFR 60, Subpart Dc because these boilers were constructed before June 9, 1989.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.03(1))

**Sulfur Dioxide:** (ADEM Admin. Code R 335-3-5-.01(1))

**PSD Synthetic Minor Limit for PM and SO<sub>2</sub>:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart DDDDD:** (ADEM Admin. Code R 335-3-11-.06(107))

*Opacity*

The state opacity requirement would be applicable to Boilers #1 and #3.

*Particulate*

The state particulate emission limits for fuel burning equipment would be applicable to Boilers #1 and #3. The Class I county particulate equation yields allowable emissions of 0.239 lb/MMBTU for the #1 Boiler and 0.190 lb/MMBTU for the #3 Boiler. The ash content of the No. 6 fuel oil burned in the #1 and #3 Boilers is also restricted to a maximum of 0.44% ash by weight. This limit was taken to avoid a PSD review.

*Sulfur Dioxide*

Sulfur dioxide emissions from Boilers #1 and #3 would be limited to no greater than 4.0 lb/MMBTU based upon the state fuel burning regulations for Class II Counties. The sulfur dioxide emissions from these boilers are further restricted by a maximum sulfur content on the fuel oils of no greater than 0.7% by weight. The fuel oil sulfur limitation was taken in order to correct for modeled SO<sub>2</sub> National Ambient Air Quality Standard (NAAQS) exceedances in the area.

*HAP:*

Boiler #1 and Boiler #3 associated with this unit are subject to 40 CFR 63, Subpart DDDDD, the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. Since these boilers are classified as existing sources, the compliance date for this regulation is January 31, 2016.

Periodic Monitoring

*Opacity*

Periodic monitoring for the opacity requirements for Boilers #1 and #3 would consist of no monitoring while burning natural gas due to the inherent clean burning nature of this fuel and daily visual observations while burning #2 and #6 fuel oil. If visible emissions are noted, the facility will be required to initiate corrective action within 4 hours and

conduct an additional observation to confirm that the opacity is reduced to normal.

#### *Particulate*

No periodic monitoring for the particulate limits for Boilers #1 and #3 would be necessary. Calculations based upon AP42 factors, and the oil sulfur limit, yielded particulate emissions of 0.06 lb/MMBTU for No. 6 fuel oil and 0.01 lb/MMBTU for No. 2 fuel oil. Therefore, these sources would be expected to meet the particulate limits based upon the fuels utilized in these boilers.

#### *Sulfur Dioxide*

Periodic monitoring for the SO<sub>2</sub> emission limits for Boilers #1 and 3 would consist of monitoring the sulfur content of the fuel oils fired in these units. No periodic monitoring would be necessary while burning natural gas due to the inherent clean burning nature of this fuel.

#### *HAP:*

Since these boilers would use fuel oil only during a curtailment or supply interruption of natural gas, keeping records of the total hours per calendar year when fuel oil is burned and the total hours per calendar year that the boilers are operated during periods of gas curtailment or gas supply emergencies would serve as periodic monitoring. These

boilers would be required to perform a tune-up every year specified in 40 CFR 63.7540 as referenced in Table 3.

## **OPERATING SUMMARY NO. 2**

### **Emission Unit 057: 122.6 MMBTU/hr Natural Gas and No. 2 Fuel Oil Fired Boiler (Boiler #6)**

Boiler #6 may utilize natural gas or No. 2 fuel oil as fuel. This boiler is subject to NSPS, Subpart Db.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.03(1))

**Sulfur Dioxide:** (ADEM Admin. Code R 335-3-5-.01(1))

**NSPS Subpart Db:** (ADEM Admin. Code R 335-3-10-.02(2)(b))

**PSD Synthetic Minor Limit for PM, SO<sub>2</sub>, and NO<sub>x</sub>:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart DDDDD:** (ADEM Admin. Code R 335-3-11-.06(107))

#### *Opacity*

The state opacity requirement would be applicable to Boiler #6. This boiler is also subject to NSPS, Subpart Db which limits the opacity to no greater than 20%, except for one 6-minute period per hour of not more than 27%.

### *Particulate*

Particulate emissions from Boiler #6 would be limited to no greater than 0.166 lb/MMBTU based upon the state fuel burning equipment regulations. There are no particulate limits from Subpart Db for this source, other than the opacity requirement which is listed under the particulate standards section. Particulate emissions from this source are also limited to no greater than 3.2 lb/hr. This limit was taken to avoid a PSD review.

### *Sulfur Dioxide*

Sulfur dioxide emissions from Boiler #6 would also be limited to no greater than 4.0 lb/MMBTU based upon the state fuel burning regulations for Class II Counties. This source is also limited to burning no greater than 769,300 gallons of fuel oil during any consecutive 12 month period with a sulfur content of  $\leq 0.05\%$ . These limits were taken to avoid a PSD review (the fuel oil usage limit was also taken in order to limit fuel oil to 10% of the capacity so that a continuous opacity monitoring system (COMS) would not be required under Subpart Db). 3M has chosen to comply with the SO<sub>2</sub> standards of Subpart Db by only burning very low sulfur oil ( $\leq 0.5$  wt% sulfur).

### *Nitrogen Oxides*

NOx emissions from Boiler #6 are limited to no greater than 0.1 lb/MMBTU as required under NSPS, Subpart Db. The NOx emissions are also limited to 38 tons per year (based upon a rolling 12 month period). This limit was taken to avoid a PSD review.

#### *HAP:*

Boiler #6 is subject to 40 CFR 63, Subpart DDDDD, the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. Since this boiler is classified as an existing source, the compliance date for this regulation is January 31, 2016.

#### Periodic Monitoring

##### *Opacity*

Subpart Db requires a COMS; however, 3M is utilizing alternate monitoring. The alternate monitoring consists of conducting visible emissions observations while burning oil and taking a 10% annual capacity factor limit for oil. The Subpart Db monitoring would be adequate for periodic monitoring for the opacity requirements. No periodic monitoring would be required while burning natural gas due to the inherent clean burning nature of this fuel.

##### *Particulate*

3M has indicated that no periodic monitoring should be necessary for the particulate requirements since calculations based upon AP42 for fuel oil would not exceed the particulate limits. The application form lists potential particulate emissions as 2.89 lb/hr based upon fuel oil usage, which is less than the 3.2 lb/hr and 0.166 lb/MMBTU (20.4 lb/hr) particulate limits.

#### *Sulfur Dioxide*

Subpart Db requires maintaining fuel receipts to demonstrate use of only very low sulfur fuel. This monitoring should be acceptable as an indicator of compliance with the SO<sub>2</sub> emission limits for Boiler #6.

#### *Nitrogen Oxides*

Subpart Db requires a NO<sub>x</sub> continuous emissions monitoring system (CEMS); however, 3M is utilizing alternate monitoring. A predictive emission monitoring system (PEMS) is being utilized in lieu of a NO<sub>x</sub> CEMS. The use of the NO<sub>x</sub> PEMS has been accepted for periodic monitoring for the NO<sub>x</sub> emissions limits for this boiler.

#### *HAP:*

Since this boiler would use fuel oil only during a curtailment or supply interruption of natural gas, keeping records of the total hours per calendar year when fuel oil is burned and the total hours per calendar

year that the boilers are operated during periods of gas curtailment or gas supply emergencies would serve as periodic monitoring. This boiler would be required to perform a tune-up every year specified in 40 CFR 63.7540 as referenced in Table 3.

### **OPERATING SUMMARY NO. 3**

#### **Emission Unit 090: 8 MMBTU/HR 15-2 DOWTHERM NATURAL GAS AND PROPANE FIRED BOILER**

This boiler only utilizes natural gas as fuel.

#### Emission Standards

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.03(1))

**Sulfur Dioxide:** (ADEM Admin. Code R 335-3-5-.01(1))

**NESHAP Subpart DDDDD:** (ADEM Admin. Code R 335-3-11-.06(107))

#### *Opacity*

The state opacity requirement would be applicable to this source.

#### *Particulate*

The state particulate emission limits for fuel burning equipment would be applicable to this source. The Class I county particulate equation yields maximum allowable emissions of 0.55 lb/MMBTU for the 15-2 Dowtherm Boiler and 0.50 lb/MMBTU for the 19 Dowtherm Boiler.

### *Sulfur Dioxide*

Sulfur dioxide emissions from this source would be limited to no greater than 4.0 lb/MMBTU, based upon the state fuel burning regulations for Class II Counties.

### *HAP:*

The 15-2 Dowtherm natural gas and propane fired boiler associated with this unit is subject to 40 CFR 63, Subpart DDDDD, the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. Since this boiler is classified as an existing source, the compliance date for this regulation is January 31, 2016.

### Periodic Monitoring

#### *Opacity*

No periodic monitoring for the opacity requirements for this source would be necessary due to the inherent clean burning nature of natural gas.

#### *Particulate*

No periodic monitoring for the particulate requirements for this source would be required due to the inherent clean burning nature of natural gas.

### *Sulfur Dioxide*

No periodic monitoring for the SO<sub>2</sub> emission limit for this source would be required due to the inherent low sulfur content of natural gas.

### *HAP:*

Since this boiler is designed to burn only gas 1 fuels, this boiler is not subject any emission limits or operating limits as referenced in 40 CFR 63.7500(e) of Subpart DDDDD. Therefore, no period monitoring would be required. This boiler would be required to perform a tune-up every two (2) years specified in 40 CFR 63.7540 as referenced in 40 CFR 63.7500(e).

## **OPERATING SUMMARY NO. 4**

### **Emission Unit 065: 21 MMBTU/hr VDF/PVDF Boiler**

This boiler only burns natural gas as fuel and is equipped with low NO<sub>x</sub> burners. This boiler is subject to NSPS, Subpart Dc.

### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.03(1))

**Sulfur Dioxide:** (ADEM Admin. Code R 335-3-5-.01(1))

**NSPS Subpart Dc:** (ADEM Admin. Code R 335-3-10-.02(2)(c))

**NESHAP Subpart DDDDD:** (ADEM Admin. Code R 335-3-11-.06(107))

*Opacity*

The state opacity requirement would be applicable to the VDF/PVDF Boiler. There are no opacity standards under NSPS, Subpart Dc for boilers which only burn natural gas.

*Particulate*

Particulate emissions from the VDF/PVDF Boiler would be limited to no greater than 0.36 lb/MMBTU based upon the state fuel burning equipment regulations. There are no particulate requirements from Subpart Dc for this source since only natural gas is utilized as fuel.

*Sulfur Dioxide*

Sulfur dioxide emissions from this source are limited to no greater than 4.0 lb/MMBTU based upon the state fuel burning regulations for Class II Counties. There are no applicable SO<sub>2</sub> requirements from Subpart Dc for this source.

NSPS, Subpart Dc requires records of the daily amounts of each fuel used each day.

*HAP:*

The VDF/PVDF boiler associated with this unit is subject to 40 CFR 63, Subpart DDDDD, the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. Since this boiler is classified as an existing source, the compliance date for this regulation is January 31, 2016.

#### Periodic Monitoring

##### *Opacity*

No periodic monitoring for the opacity limit for this source would be necessary due to the inherent clean burning nature of natural gas.

##### *Particulate*

No periodic monitoring for the particulate limit for this source would be necessary due to the inherent clean burning nature of natural gas.

##### *Sulfur Dioxide*

No periodic monitoring for the SO<sub>2</sub> limit for this source would be necessary due to the inherent clean burning nature of natural gas.

##### *HAP:*

Since this boiler is designed to burn only gas 1 fuels, this boiler is not subject any emission limits or operating limits as referenced in 40 CFR 63.7500(e) of Subpart DDDDD. Therefore, no period monitoring would

be required. This boiler would be required to perform a tune-up every year specified in 40 CFR 63.7540 as referenced in Table 3.

## **OPERATING SUMMARY NO. 5**

### **Emission Unit 037: Polymer and Resin Manufacturing Line 15-2**

This unit produces polyethylene terephthalate (PET) and polyethylene naphthalene (PEN) resins. This unit is subject to 40 CFR Part 63, Subpart FFFF.

#### Emission Standards:

**PSD Synthetic Minor Limit for VOC:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

#### *Opacity/Particulate*

There are no particulate sources associated with this unit and therefore there are no opacity or particulate requirements.

#### VOCs:

This unit utilizes an after condenser and a scrubber to control VOC/HAP emissions. The VOC emissions from this unit (EPA) are limited to no greater than 10.0 lb/hr. This limit was taken to generate credits to avoid a PSD review during modification of another unit.

Subpart FFFF:

*Batch Process Vent*

3M has only identified one process vent in this unit, a Group 1 batch process vent. The annual emissions are greater than 10,000 lb/yr and the facility will comply with 63.2460. Section 63.2460(c)(4) requires that a batch mass emission limit be established to meet the emission limit in Table 2 of this subpart, that the recordkeeping requirements of 63.2525(b), (c), and (d), and the reporting requirements of 63.2520 must be followed, and that the source shall comply with 63.2520(e)(10) when process changes are made.

*Wastewater:*

3M has identified two wastewater streams in the 15-2 Unit, the 15-2 Vac. and 15-2 Scrub. Both of these streams have been classified as Group 1 Wastewater streams under 63.2485 (c) (1); therefore, these streams must comply with the reporting and recordkeeping requirements of 63.146 and 63.147 of the HON, with the exceptions as noted under 63.2485.

*LDAR:*

The LDAR program as specified under the 40 CFR 63, Subpart H or Subpart UU is required with the exceptions noted under 63.2480(a).

Periodic Monitoring

*VOCs:*

Periodic monitoring for the 10 lb/hr VOC emissions limit consists of maintaining a minimum scrubber water flow rate of 18 gpm and conducting VOC emission testing at least every 3 years. The flow rate was based upon testing results. Records are required indicating periods when the flow is below 18 gpm.

*HAPs:*

No periodic monitoring would be required for the emission limits of Subpart FFFF since the monitoring under the Subpart should be acceptable. This MACT was promulgated after November 15, 1990.

## **OPERATING SUMMARY NO. 6**

### **Emission Unit 053: Building 39, 15, and 19 Transport Systems**

Raw materials are transferred from Building 39 to Building 15 and Building 19. Pellets made in the resin process are transferred from Building 15 and Building 19 to storage or to film lines.

The Line 15-2 powder charging station is equipped with a dust collector. This emission point is listed on the process flow diagram in the Title V application as 15-PV-2002 (the TA/NDC hopper dust collector).

The polyester transport air conveyance system is equipped with associated control devices. Part of this permit covers the transport system in Building 39 which is controlled by a dust collector. The emission point on the process flow diagram in the Title V application is listed as 39-PV-2001.

There are five additional transport emission points in these Buildings, the 15-2, and 19 QC hopper dust collectors, the 15 powder charging dust collector, the 19 powder unloading dust collector, and the 19 pellet dryer dust collector. These emission points are listed as Emission Points 15-PV-2001, 19-PV-1001, 15-PV-3001, 19-PV-3001, and 19-PV-3002 respectively, on the process flow diagram in the Title V application.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

*Opacity/Particulate:*

The state opacity requirement and allowable particulate limit would be applicable to each of the above noted emission points. In addition, particulate emissions from points 39-PV-2001, 15-PV-2002, 15-PV-3001, 19-PV-3001, and 19-PV-3002 are limited to 1.30 lb/hr, 0.16 lb/hr, 0.16

lb/hr, 0.09 lb/hr, and 0.07 lb/hr respectively. These limits were taken to avoid a PSD review.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for each of the above noted emission points would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

**OPERATING SUMMARY NO. 7**

**Emission Unit 017: Storage Silos and Pellet Transport**

The total quantity of polyester transported by the system is limited to  $\leq$  3.6 million pounds per day. Listed below are the emission points

associated with pellet transport and storage silos associated with this unit:

Emission Point	Description
14-PRC-203	Weigh hoppers and unloading bins
14-PC-3001	Pellet Surge Hoppers for Film Lines
14-PC-1901	Silos
14-PC1501	Blender Hoppers

Each of the above noted emission points are equipped with a dust collector.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

*Opacity/Particulate:*

The state opacity requirement and allowable particulate limit would be applicable to each of the above noted emission points.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for each of the above noted emission points would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions

are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

## **OPERATING SUMMARY NO. 8**

### **Emission Unit 062: D3 Film Line**

Resin pellets are extruded into film which is stretched to a desired thickness and wound onto rolls on the D-3 film Line.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart JJJJ:** (ADEM Admin. Code R 335-3-11-.06(87))

#### *Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions would be emission points 14-PC-3002, 14-PC-3006, 14-PC-3003, 14-PV-3007, 14-PV-031, 14-PV-405, 14-PV-408, and 14-PV-407. The state allowable particulate limit would be applicable to

these emission points. The particulate emissions from 14-PV-3003 and 14-PC-3006 are also limited to 0.01 lb/hr and 0.03 lb/hr, respectively. The state opacity limit would also be applicable to each of these emission points.

*HAP:*

The coating line associated with this unit is subject to 40 CFR Part 63, Subpart JJJJ, the NESHAP for Paper and Other Web Coating. Since this source was indicated to be classified as an existing source, the compliance date for this regulation was December 5, 2005.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for each of the noted emission points would be weekly (14-PC-3002, 14-PC-3006, 14-PV-3007, 14-PV-031, 14-PV-405, 14-PV-408, and 14-PV-407.) or monthly (14-PC-3003) visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon

properly operating control devices (baghouses and cyclones). Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

*HAPs:*

No periodic monitoring other than that listed in Subpart JJJJ would be required since this regulation was promulgated after November 15, 1990.

**OPERATING SUMMARY NO. 9**

**Emission Unit 054: D6 Film Line**

Thermoplastic resins are extruded into film, which may or may not be stretched to a desired thickness and wound onto rolls on the D-6 film Line.

There are six emission points in this unit associated with transport of resin pellets, 14-PC-6001, 14-PC-6002, 14-PC-6003, 14-PC6301, 14-PC-6302, and 14-PC-6303. Each of these emission points is equipped with a filter and is located inside a building.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

*Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions would be emission points 14-PC-6001, 14-PC-6002, 14-PC-6003, 14-PC6301, 14-PC-6302, and 14-PC-6303. The state allowable opacity and particulate limits would be applicable to these emission points. The total particulate emissions from all of these six points are also limited to 0.2 lb/hr.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for each of the above noted emission points would not be required since these points are located inside a building. Therefore, a Method 9 would not be required. Each of these emission points shall be inspected once per year to ensure operational integrity. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

## **OPERATING SUMMARY NO. 10**

### **Emission Unit 096: D7 Film Line**

Polyester resin pellets are extruded into film which is stretched to a desired thickness and wound onto rolls on the D-7 Film Line.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

#### *Fuel Burning Equipment:*

This line utilizes ovens which burn natural gas as fuel (emission points 14-PV-065, 14-PV-064, 14-PV-058, 14-PV-184, 14-PV-185, and 14-PV-054). These ovens are direct fired and therefore the fuel burning state regulations would not be applicable.

#### *Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions, other than the ovens referenced above, would be emission points 14-PV-101 (DTR Hopper), 14-PC-529 (D7/D8 Surge hopper), and 14-PV-532 (D7 Maker Line). The state allowable opacity

and particulate limits would be applicable to these emission points. Particulate emissions for emission points 14-PV-101, 14-PC-529, and 14-PV-532 are also limited to 0.07 lb/hr, 0.07 lb/hr, and 0.02 lb/hr, respectively. The oven emission points would also be subject to the state opacity regulation.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for each of the above noted emission points, other than the ovens, would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

No periodic monitoring for the opacity limit on the ovens should be necessary due to the inherent clean burning nature of natural gas.

## **OPERATING SUMMARY NO. 11**

### **Emission Unit 059: D8 Film Line**

Resins are extruded into film which is stretched to a desired thickness and wound onto rolls. Typical resins include but are not limited to are polyurethane and styrene.

The coating line associated with this unit is subject to 40 CFR Part 63, Subpart JJJJ, the NESHAP for Paper and Other Web Coating. However, since this coating line has been removed, this unit is not subject to this MACT.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

#### *Fuel Burning Equipment:*

This line utilizes ovens which burn natural gas as fuel (emission points 14-PV-571, 14-PV-570, 14-PV-569, 14-PV-169, 14-PV-168, and 14-PV-175). These ovens are direct fired and therefore the fuel burning state regulations would not be applicable.

*Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions, other than the ovens referenced above, would be the following:

Emission Point No.	Description	Permit Limit
14-PC-8001	DTR Baghouse	None
14-PC-8002	D8 Baghouse	0.003 lb/hr
14-PV-8301, 14-PV-8302	Grinder Cyclones	
14-PC-8201	Baler Filter Bag	0.47 lb/hr
14-PC-8005	Feeder Baghouse	0.75 lb/hr
14-PC-8003	Feeder Baghouse	0.47 lb/hr
14-PC-8004	Feeder Baghouse	0.47 lb/hr
14-PC-529	D7/D8 Surge Hopper Cyclone	0.07 lb/hr
14-PV-8303	DTR Hopper Cyclone	None

The state allowable opacity and particulate limits would be applicable to the above noted emission points in the table. There are also source specific particulate limits on several emission points as listed in the table above. The state opacity requirement would also be applicable to the ovens in this unit.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity and particulate requirements for each of the emission points noted in the table above, excluding the ovens (14-

PV-571, 14-PV-570, 14-PV-569, 14-PV-169, 14-PV-168, and 14-PV-175), would be weekly (14-PC-8001, 14-PC-8002, 14-PC-529, 14-PV-8303) and monthly (14-PC-8003, 14-PC-8004, 14-PC-8005) visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions.

No periodic monitoring for the opacity limit on the ovens should be necessary due to the inherent clean burning nature of natural gas.

## **OPERATING SUMMARY NO. 12**

### **Emission Unit 059: D9 Film Line**

Resin Pellets are extruded into film which is stretched to a desired thickness and wound onto rolls. There are various resins extruded.

The coating line associated with this unit is subject to 40 CFR Part 63, Subpart JJJJ, the NESHAP for Paper and Other Web Coating. However, since this coating line has been removed, this unit is not subject to this MACT.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

*Fuel Burning Equipment:*

This line utilizes ovens which burn natural gas as fuel (emission points 14-PV-226, 14-PV-225, 14-PV-216, 14-PV-215, 14-PV-220, 14-PV-219, 14-PV-158, 14-PV-159, 14-PV-230, 14-PV-221, 14-PV-223, 14-PV-232, 14-PV-236, 14-PV-233, 14-PV-167, 14-PV-246, 14-PV-261, 14-PV-262, 14-PV-264, 14-PV-263, 14-PV-259, 14-PV-265, and 14-PV-267). These ovens are direct fired and therefore the fuel burning state regulations would not be applicable.

*Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions, other than the ovens referenced above, would be the following:

Emission Point No.	Description	Permit Limit
14-PV-9001	Tote Discharge System	0.16 lb/hr (Z002 – Stack #6, Dust Collector 5)
14-PV-9007	Flake Transport to Extruder 4 Blower	(0.98 lb/hr (Z002 – C4 tote dust collector)
14-PV-9005	Extruder Receivers (A)	0.16 lb/hr (Z002 –

	Dust Collector DCA9B1	Stack 2, Dust Collector 2)
14-PV-9002	Extruder Receivers Dust Collector DCA-981	0.32 lb/hr (Z002 – Stack 1, Dust Collector 1)
14-PV-9003	Extruder Totes/Boxes Dust Collector DCA-9A1	None
14-PV-9008	Floor Scrap Grinders Baghouse	0.91 lb/hr (Z002 – Stack 3)

The state allowable opacity and particulate limits would be applicable to the above noted emission points in the table. There are also source specific particulate limits on several emission points as listed in the table above. The state opacity requirement would also be applicable to the ovens in this unit.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity and particulate requirements for each of the emission points noted in the table above, excluding the ovens, would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions.

No periodic monitoring for the opacity limit on the ovens should be necessary due to the inherent clean burning nature of natural gas.

### **OPERATING SUMMARY NO. 13**

#### **Emission Unit 028: PET Reclaim Operations**

Scrap PET is ground into flakes and reconstituted into pellets for reuse. Dust collectors and cyclones are utilized to control particulate emissions from these operations. Emission points listed in the application which are associated with these operations include the following:

Emission Point No.	Description	Permit Limit
14-PCR-201	Dust collector for pelletizing system densifier hopper (Reclaim 2 Group)	None
14-PV-SS01	Dust collector for solid state polymerizers for reclaim pellet production (SSP-001)	5.0 lb/hr
14-PCR-204	Dust collector for DSR, D7, D8 vacuum system (R2-001)	None

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

*Opacity/Particulate:*

The state opacity and particulate limits would be applicable to each of the above noted emission points. Particulate emissions are also limited to 5 lb/hr for emission point 14-PV-SS01.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for each of the above noted emission points, which would be expected to emit particulate emissions, would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

**OPERATING SUMMARY NO. 14**

### **Emission Unit 055: Rubber Mills**

There are three rubber mills in this unit. Each of these mills is equipped with a scrubber for VOC emissions control. The internal mixer and a pilot mill are also vented to the #3 Rubber Mill scrubber. The application also indicates that powder weighing (additives) for all the rubber mills and a mixer is vented to a dust collector. The dust collector has uncontrolled particulate emissions of less than 5 TPY as listed in the application and therefore would be an insignificant source.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for VOC:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

#### *Opacity/Particulate:*

The state opacity and particulate limits would be applicable to the unit due to addition of powder additives. 3M indicated that only small amounts of particulate would be expected at the scrubber inlets and that very minimal amounts would be expected at the scrubber outlets.

*VOCs:*

Emissions of VOCs from the rubber mills are limited by a limit on the solvent usage for these mills of 45,000 gallons during a 12 month period. The rubber mill scrubbers also are required to maintain a VOC control efficiency of 90%.

*HAP:*

The rubber mill scrubbers also are required to maintain a HAP control efficiency of 98%.

Periodic Monitoring:

*Opacity/Particulate:*

No periodic monitoring for the particulate and opacity standards on the scrubbers associated with each of the rubber mills should be required due to the minimal amount of particulates which would be expected (0.073 tpy per scrubber).

*VOCs:*

Periodic monitoring for the VOC emission limitations for these units would consist of maintaining records of the solvent usage for the mills and monitoring and maintaining the scrubber water flow rates above 28 gpm, 28 gpm, and 35 gpm for scrubber #1, #2, and #3 respectively. This

would be based upon hourly averages during operations involving application of solvent additives on days when the underlying process is operating.

*HAPs:*

No periodic monitoring other than that listed in Subpart FFFF would be required since this regulation was promulgated after November 15, 1990.

## **OPERATING SUMMARY NO. 15**

### **Emission Unit 016: 3800 Batch Chemical Reactor System**

Fluorochemical (FC) monomers are received and held in closed containers or tanks. The monomers are fed to a reactor system where they are polymerized in a water suspension. The FC polymers are transferred to other equipment for further processing at the facility.

Emission Standards:

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

Emission Standards/Periodic Monitoring:

There is one vent from this unit, 51-PC-001. Only VOC emissions are reported as being emitted from this point. This unit would not be classified as insignificant due to the reported potential VOC emissions (33.4 TPY). This is an affective source for the Subpart FFFF (MON

MACT); however, since there are no HAP emissions, no periodic monitoring would be required. Also, there would be no requirements for this unit, other than the requirements listed in the General Provisions of the Permit; therefore, no periodic monitoring would be required.

## **OPERATING SUMMARY NO. 16**

### **Emission Unit 093: 419 Reactor System**

Fluorochemical (FC) monomers are received and held in closed containers or tanks. The monomers are fed to a batch reactor system where they are polymerized in a water suspension. The FC polymers are transferred to other equipment for further processing at the facility.

#### Emission Standards:

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

#### Emission Standards/Periodic Monitoring:

There are three vents from this system, 04-VT-704, 04-VT-700, and 04-PV-584, as listed in the Title V application. Only VOC emissions are reported as being emitted from these points. This unit would not be classified as insignificant due to the reported potential VOC emissions (124 TPY). This is an affective source for the Subpart FFFF (MON MACT); however, since there are no HAP emissions, no periodic monitoring would be required. Also, there would be no requirements for this unit, other

than the requirements listed in the General Provisions of the Permit; therefore, no periodic monitoring would be required.

## **OPERATING SUMMARY NO. 17**

### **Emission Unit 051: 511 Reactor System**

Fluorochemical (FC) monomers are received and held in closed containers or tanks. The monomers are fed to a batch reactor system where they are polymerized in a water suspension. The FC polymers are transferred to other equipment for further processing at the facility. Some products from the 3800 reactor can be made in this unit

#### Emission Standards:

**PSD Synthetic Minor Limit for VOC:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

#### *VOCs:*

This unit is subject to a VOC emission limit of 84 tons during a 12 month period.

#### Periodic Monitoring:

#### *VOCs:*

Periodic monitoring for the VOC emission limit for this unit would consist of recordkeeping of all products produced in the system, the monthly production of each product, the monthly VOC emissions for each product, the emission factor for each product, and a rolling 12 month VOC emissions total.

*HAPs:*

This is an affective source for the Subpart FFFF (MON MACT); however, since there are no HAP emissions, no periodic monitoring would be required.

**OPERATING SUMMARY NO. 18**

**Emission Unit 092: 408 Reactor System Washing and Drying**

This unit does continuous washing, drying, pelletizing, and packaging of coagulated fluoroelastomer latexes.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

This unit utilizes a dust collector to control particulate emissions from a cutting operation for emission points 04-PV-011 and 04-PV-023.

*Opacity/Particulate:*

This unit would be subject to the state opacity and process industries particulate regulations. The emission points which would be expected to emit particulate emissions would be 04-PV-560, 04-BT-606, 04-PV-011, and 04-PV-023.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for emission points 04-PV-011, and 04-PV-023, which would be expected to emit particulate emissions, would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

*HAPs:*

This is an affective source for the Subpart FFFF (MON MACT); however, since there are no HAP emissions, no periodic monitoring would be required.

## **OPERATING SUMMARY NO. 19**

### **Emission Unit 063: Vinylidene Fluoride (VDF) Unit and VDF Loading Station**

Vinylidene fluoride (VDF) is produced in a pyrolysis furnace. The VDF is further purified by washing and distillation to remove organic byproducts.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**PSD Synthetic Minor Limit for VOC:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

#### *Opacity*

The state opacity limit would be subject to the furnace (MS-1) associated with this unit. No other emission points in this unit would be expected to emit particulates and therefore would not be expected to have opacity.

#### *Particulate:*

The state particulate limit for fuel burning equipment would not be applicable to the furnace associated with this unit since the furnace would not be defined as fuel burning equipment according to the state regulations (i.e., the furnace is not indirect fired).

*VOCs:*

This unit utilizes a carbon bed adsorption unit (V-2) to control VOC emissions. VOC emissions from the carbon bed adsorber are limited to no greater than 15.8 lb/hr. An LDAR program equivalent to Subpart H of the HON is also implemented to control VOC emissions from the manufacturing unit and VDF loading station.

Periodic Monitoring:

*Opacity:*

No periodic monitoring would be necessary for the opacity requirement for the furnace. The furnace is fired only with natural gas which is an inherently clean burning fuel.

*VOCs:*

Periodic monitoring for the VOC emission limit would consist of utilizing a gas analyzer and a flow meter to monitor the average daily VOC emissions rate, in lb/hr, from the carbon bed. A written plan to ensure no breakthrough occurs on the carbon bed is also required. An LDAR

program equivalent to Subpart H of the HON is also required to be followed for the manufacturing unit and loading station.

*HAPs:*

This is an affective source for the Subpart FFFF (MON MACT); however, since there are no HAP emissions, no periodic monitoring would be required.

**OPERATING SUMMARY NO. 20**

**Emission Unit 064: Polyvinylidene Fluoride (PVDF) Unit**

VDF is polymerized in this unit that utilizes a common carbon bed adsorption unit with the VDF unit for control of VOC emissions. Baghouses are also utilized by this unit to control particulate emissions.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for VOC:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

*Opacity:*

The state opacity limit would be applicable to this unit. The only emission points expected to emit particulate and therefore have opacity

were the fluid bed dryer vent filter (EV-4), two powder storage bins (EV-6, EV-7), and the master batch powder storage bin (EV-8).

*Particulate:*

The state particulate limit would be applicable to this unit. Particulate emissions from emission points EV-4, EV-6, EV-7, and EV-8 are also limited to 0.56 lb/hr, 0.51 lb/hr, 0.51 lb/hr, and 0.08 lb/hr, respectively. These particulate limits were based upon the maximum state particulate limit for the unit (7.91 TPY).

*VOCs:*

This unit utilizes the carbon bed adsorption unit (common to the VDF unit) to control VOC emissions. VOC emissions from the carbon bed adsorber are limited to no greater than 15.8 lb/hr. An LDAR program equivalent to Subpart H of the HON is also implemented to control VOC emissions from this unit.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity requirements for emission points EV-4, EV-6, EV-7, and EV-8 would be weekly visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed,

corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions. This periodic monitoring should also be acceptable for the particulate limits since expected emissions would be less than the limits based upon properly operating control devices. Should one of these control devices not be operating properly, visible emissions would be expected to be observed.

*VOCs:*

Periodic monitoring for the VOC emission limit would consist of utilizing a gas analyzer and a flow meter to monitor the average daily VOC emissions rate, in lb/hr, from the carbon bed. A written plan to ensure no breakthrough occurs on the carbon bed is also required. An LDAR program equivalent to Subpart H of the HON is also required to be followed for the manufacturing unit and loading station.

*HAPs:*

This is an affective source for the Subpart FFFF (MON MACT); however, since there are no HAP emissions, no periodic monitoring would be required.

**OPERATING SUMMARY NO. 21**

### **Emission Unit 100: Forming Machine and Mixing Tanks**

The steps in this process are mixing, forming, curing, and packaging. Chemicals are transferred into mixing tanks by several methods. Chemicals are pumped from the mixing area to the forming area with open handling at the forming machine.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

#### *Opacity/Particulates:*

There are particulate emissions associated with this unit from manual feeding small quantities of materials into mixing tanks (uncontrolled potential emissions listed as 0.22 TPY); however, this unit is not insignificant because of HAP emissions. The state opacity requirement and state particulate rate would be applicable to this process.

#### Periodic Monitoring:

#### *Opacity/Particulates:*

No periodic monitoring for the opacity requirement would be required since if any opacity would be expected it would only be for very short

durations (i.e., during charging). Also, no periodic monitoring would be necessary for particulate emissions since the expected emissions (0.22 TPY) would be minimal.

*HAPs:*

No periodic monitoring would be required for the emission limits of Subpart FFFF since the monitoring under the Subpart should be acceptable. This MACT was promulgated after November 15, 1990.

**OPERATING SUMMARY NO. 22**

**Emission Unit 048: Building 3 and 4 Batch Reactor Systems**

Batch reactors produce nonfluorochemicals and fluorochemicals.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for VOC and HF:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

*Particulate/Opacity:*

Particulate emissions are expected from some of the reactor systems from the addition of powder raw materials. The state opacity requirement and the state particulate rate would be applicable to this process.

*VOC:*

VOC emissions from the Building 3 and 4 Reactor Systems are limited to no greater than 176,904 lbs/12 months. The 3800 Reactor Systems under Emission Unit 016 are not included in this permit.

*HF:*

HF emissions are limited to no greater than 0.3 lb/hr from the 340 reactor system, which is equipped with a scrubber.

*HAPs:*

The reactors under this unit are flexible operating units. Under the MACTs of 40 CFR Part 63, the subparts require the facility to make primary product determinations to determine applicability. Currently these reactors are subject to 40 CFR Part 63, Subpart FFFF.

*LDAR:*

The LDAR program as specified under the 40 CFR 63, Subpart H or Subpart UU is required with the exceptions noted under 63.2480(a).

Periodic Monitoring:

*Particulate/Opacity:*

No periodic monitoring would be necessary for the opacity and particulate standards. This determination was made since very minimal opacity and particulate emissions would be expected. Also any opacity

and particulate emissions would only be expected for short durations (i.e., during the addition of the powder raw materials). Furthermore, the reactor systems are located within a building which should reduce any opacity or particulate to the atmosphere.

*VOCs:*

Periodic monitoring to ensure compliance with the VOC emission limit from these reactor systems would consist of recordkeeping. 3M is required to maintain records of the products produced in the reactor systems, the monthly production of each product, the monthly VOC emissions associated with each product, and an emission factor for each product. The emission factors are based upon Emission Master modeling.

*HF:*

Periodic monitoring for the HF limit on the 340 reactor system would consist of maintaining a water flow rate of 17 gpm during production of products which would emit HF. The flow rate would be monitored and recorded daily during production of HF emitting materials.

*HAPs:*

Periodic monitoring for the HAPs in the wastewater for the steam stripper would consist of maintaining the minimum feed temperature of 203°F and the minimum steam to feed ratio of 0.04 kg/liter.

**OPERATING SUMMARY NO. 23**

**Emission Units 029 and 035: Tanks and Transfer Rack vented to the Hazardous Waste Area Scrubber and Carbon Bed Adsorption System**

Each of the below noted tanks are vented to the hazardous waste storage area scrubber and carbon bed adsorption system and tanks 598-A-01 and 593-A-03 are subject to NSPS, Subpart Kb.

Emission No.	Tank No.	Description
029	598-A-01	30,000 Gallon Waste Solvent Tank
035	598-A-03	19,815 Gallon Waste Solvent Tank

Emission Standards:

**NSPS Subpart Kb:** (ADEM Admin. Code R 335-3-10-.02(9)(b))

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

*NSPS Subpart Kb:*

Tank Nos. 598-A-01 and 598-A-03 would be required to comply with 60.116b (a) and (b) of Subpart Kb (capacity and dimension recordkeeping requirements) due to the size of this vessel. The recordkeeping requirements of 60.116b(a), (b), and (c) of Subpart Kb (capacity, dimensions, VOL stored, period of storage, vapor pressure records) would also be applicable to Tank Nos. 598-A-01 and 598-A-03.

*NESHAP Subpart FFFF:*

The tanks hazardous waste scrubber water flow rate shall be monitored and maintained at 1.6 gpm based on hourly averages. The carbon filters are to be replaced once every two months.

#### **OPERATING SUMMARY NO. 24**

##### **Emission Units 040, 041: Tanks and Transfer Racks Vented to the Resin Tanks Scrubber**

Emission No.	Tank No.	Description
040	1961-A-224	36,000 Gallon Recovered Methanol Tank
041	1961-A-233	30,000 Gallon Recovered Ethylene Glycol Tank

##### Emission Standards:

**NSPS Subpart Kb:** (ADEM Admin. Code R 335-3-10-.02(9)(b))

**NESHAP Subpart JJJ:** (ADEM Admin. Code R 335-3-11-.06(61))

**NESHAP Subpart EEEE:** (ADEM Admin. Code R 335-3-11-.06(82))

Tank Nos. 1961-A-224 and 1961-A-233 are vented to the resin tanks scrubber. Tank No. 1961-A-224 is subject to 40 CFR Part 63, Subpart JJJ and has been classified as a Group 1 storage vessel. Tank No. 1961-A-233 is subject to NSPS, Subpart Kb (this tank is exempted from JJJ since 63.1315(d) indicates that the provisions of the Subpart do not apply to ethylene glycol tanks).

Tank No. 1961-A-224 has a limit on the vapor pressure of materials stored in this tank to  $\leq 3.43$  psia. This tank is equipped with a scrubber

to meet the requirements of Subpart JJJ (i.e., the chosen compliance option is to use a closed vent system and a control device). Continuous monitoring of the scrubber water flow rate (at least 27 gpm) is performed to meet the requirements of Subpart JJJ.

Tank No. 1961-A-233 has a limit on the vapor pressure of materials stored in this tank to  $\leq 0.433$  psia. Also there is a requirement that this tank be vented to a scrubber and that the scrubber be maintained and operated such as to minimize emissions. Due to the vapor pressure limit and size of this vessel, only the recordkeeping requirements of 60.116b(a) and (b) of Subpart Kb would be applicable.

Tank No. 1961-A-224 Transfer Rack is subject to 40 CFR Part 63, Subpart EEEE (National Emission Standards for Hazardous Air Pollutants (NESHAPs): Organic Liquids Distribution (OLD MACT)). The transfer rack is exempt from emission limits, operating limits, and work practice standards because the recovered methanol byproduct which is loaded into tank trucks or rail cars is less than 98% OLD MACT organic HAP content.

## **OPERATING SUMMARY NO. 25**

**Emission Units 095: 50,000 Gallon Isopropyl Tank (Tank No. 101-A-03)**

Due to the date of installation, Tank 101-A-03 is not subject to NSPS, Subpart Kb or the state regulations regarding loading and storage of VOCs. It is not classified as insignificant since HAP (isopropyl) emissions are estimated as 1,778 lb/yr. Since there are no emission limits for this vessel, no periodic monitoring would be required.

## **OPERATING SUMMARY NO. 26**

### **Emission Unit 069: PVDF and Elastomer Pilot Reactor Systems**

Fluorochemical monomers (gas and liquid) are fed to three pilot reactors (two produce PVDF products and one produce elastomer products) where they are polymerized.

This source is subject to the requirements of 40 CFR 63, Subpart FFFF because of the products produced. No control equipment will be required for this process. VOC and particulate matter are emitted from this process. This unit is not classified as insignificant due to the reported potential VOC emission (35.3 TPY). This is an affective source for the Subpart FFFF (MON MACT); however, since there are no HAP emissions, no periodic monitoring would be required. Also, there would be no requirements for this unit, other than the requirements listed in the General Provisions of the Permit; therefore, no periodic monitoring would be required.

## **OPERATING SUMMARY NO. 27**

### **Emission Unit 068: D10 Film Line**

Resin pellets are transferred from storage (silos, bins, and boxes) and conveyed to hoppers where they are loaded into extruders to be extruded into film, which is further processed and wound onto rolls. Resin pellet transport systems to hoppers and storage are vented to cyclones and dust collectors. Film scrap grinders would be used for managing film waste. The ground scrap film would be collected and shipped off-site for disposal.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM and VOC:** (ADEM Admin. Code R 335-3-14-.04)

**NESHAP Subpart JJJJ:** (ADEM Admin. Code R 335-3-11-.06(87))

#### *Fuel Burning Equipment:*

This line utilizes ovens which burn natural gas as fuel (emission points 28-PV-2003 through 28-PV-2019). These ovens are direct fired and therefore the fuel burning state regulations would not be applicable.

#### *Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions, other than the ovens referenced above, would be the following:

Emission Point No.	Description	Permit Limit
28-PV-1002 & 28-PV-1007	Resin Feed Hopper	0.03 lb/hr
28-Pv-1003	Resin Feed Hopper	0.03 lb/hr
28-PV-1004	Resin Feed Hopper	0.03 lb/hr
28-PV-1005	Resin Feed Hopper	0.015 lb/hr
28-PV-1006	Resin Feed Hopper	0.015 lb/hr
28-PV-1001	Resin Silos	0.05 lb/hr
14-PC-R202	Floor Scrap and Edge Trim Transport	0.9 lb/hr
14-PC-1501	Resin Silo Blender Hoppers Dust Collector	0.28 lb/hr

The state allowable opacity and particulate limits would be applicable to the above noted emission points in the table. There are also source specific particulate limits on several emission points as listed in the table above. The state opacity requirement would also be applicable to the ovens in this unit.

VOCs:

VOC emissions from the coating line are limited to 7 TPY in any consecutive rolling 12-month period based upon the coatings which was applied for in the application.

*HAP:*

The coating line associated with this unit is subject to 40 CFR Part 63, Subpart JJJJ, the NESHAP for Paper and Other Web Coating. Since this source was indicated to be classified as an existing source, the compliance date for this regulation was December 5, 2005.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity and particulate requirements for each of the emission points noted in the table above, excluding the ovens (28-PV-2003 through 28-PV-2019), would be weekly (28-PV-1002, 28-PV-1007, 28-PV-1003, 28-PV-1004, 28-PV-1005, 28-PV-1006, 28-PV-1001, 14-PC-R202, and 14-PC-1501) visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions.

No periodic monitoring for the opacity limit on the ovens should be necessary due to the inherent clean burning nature of natural gas.

*VOCs:*

Periodic monitoring for the VOC limit on the coater associated with this unit would consist of recordkeeping. The facility would be required to maintain records of the type, weight, and percent by weight of each VOC containing material used on the coating line. Also, a record must be maintained of the amount of VOCs emitted each calendar month and the rolling 12-month total of VOCs emitted.

*HAPs:*

No periodic monitoring other than that listed in Subpart JJJJ would be required since this regulation was promulgated after November 15, 1990.

**OPERATING SUMMARY NO. 28**

**Emission Unit 070: D11 Film Line**

Resin pellets are transferred from storage (silos, bins, and boxes) and conveyed to hoppers where they are loaded into extruders to be extruded into film, which is further processed and wound onto rolls. Resin pellet transport systems to hoppers and storage are vented to cyclones and dust collectors. Film scrap grinders would be used for managing film waste. The ground scrap film would be collected and shipped off-site for disposal.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**PSD Synthetic Minor Limit for PM:** (ADEM Admin. Code R 335-3-14-.04)

*Fuel Burning Equipment:*

This line utilizes ovens which are electric (emission points 29-PV-4012 through 29-PV-4017), therefore the fuel burning state regulations would not be applicable.

*Particulate/Opacity:*

The emission points within this unit which would be expected to have particulate emissions, other than the ovens referenced above, would be the following:

Emission Point No.	Description	Permit Limit
29-PV-3002	Tote Discharge	0.00006 lb/hr
29-PV-3007	Tote Discharge	0.00006 lb/hr
29-PV-3003	Charge Hopper Dust Collector	0.00006 lb/hr
29-PV-3004	Pellet Feeder Dust Collector	0.00006 lb/hr
29-PV-3005	Tote Feeder Dust Collector	0.00006 lb/hr
29-PV-3001	Pellet Silos Duct Collector	0.0012 lb/hr
29-PV-3020	Floor Scrap and Edge Trim Transport	0.014 lb/hr

The state allowable opacity and particulate limits would be applicable to the above noted emission points in the table. There are also source

specific particulate limits on several emission points as listed in the table above. The state opacity requirement would not be applicable to the ovens in this unit.

Periodic Monitoring:

*Opacity/Particulate:*

Periodic monitoring for the opacity and particulate requirements for each of the emission points noted in the table above, excluding the ovens (29-PV-4012 through 29-PV-4017), would be daily (29-PV-3002, 29-PV-3007, 29-PV-3003, 29-PV-3004, 29-PV-3005, 29-PV-3001, and 29-PV-3020) visual observations by personnel familiar with Method 9, on days when the underlying process/emission unit is operating. If visible emissions are observed, corrective actions would be required to be initiated within 4 hours. After corrective actions are taken, an additional visual inspection will be required to confirm no visible emissions.

No periodic monitoring for the opacity limit on the ovens should be necessary due to the ovens being electric.

**OPERATING SUMMARY NO. 29**

**Emission Unit 101: Bepex Dryer System**

The Bepex Dryer System is used to remove excess water from curatives. Wet material passes through an electric heater. The dry material is collected and any fines not captured are sent to a baghouse for control.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

*Particulate/Opacity:*

The emission point within this unit (BP-1) would be expected to have particulate emissions. The state allowable opacity and particulate limits would be applicable to this unit.

*HAPs:*

This dryer is subject to 40 CFR Part 63, Subpart FFFF. For continuous process vents that emit hydrogen halides or halogenated HAPs, no control is required if the collective uncontrolled emissions are less than 1000 lbs/yr as indicated by 63.2465. Therefore, no controls would be required for the process.

Periodic Monitoring:

*Opacity/Particulate:*

No Periodic monitoring for the opacity and particulate requirements for the emission point (BP-1) would be required. The controlled PM emission would be 0.025 lb/hr.

*HAPs:*

No periodic monitoring for the HAP emissions would be necessary due to the low emissions expected.

### **OPERATING SUMMARY NO. 30**

#### **Emission Unit 102: Building Dryer System**

This Dryer System is located in Building 61. The dryer system would consist of several stages to remove excess moisture from rubber raw materials. The dry material is collected by an in-process cyclone, which is controlled by an Outlet Cyclone. The final dry material is collected and packaged.

#### Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

*Particulate/Opacity:*

The emission points within this unit (cyclone and temperature control unit) would be expected to have particulate emissions. The state allowable opacity and particulate limits would be applicable to this unit.

*HAPs:*

This dryer is subject to 40 CFR Part 63, Subpart FFFF. For continuous process vents that emit hydrogen halides or halogenated HAPs, no control is required if the collective uncontrolled emissions are less than 1000 lbs/yr as indicated by 63.2465. Therefore, no controls would be required for the process. However, the facility uses a scrubber to remove the HAPs (HCL and HF) at a 95% efficiency removal rate.

Periodic Monitoring:

*Opacity/Particulate:*

No Periodic monitoring for the opacity and particulate requirements for the emission points (cyclone and temperature control unit) would be required. The controlled PM emission would be 0.15 lb/hr.

*HAPs:*

No periodic monitoring for the HAP emissions would be necessary due to the low emissions expected for HCL and HF of 0.0008 lb/hr and 0.00005 lb/hr respectively.

## **OPERATING SUMMARY NO. 31**

### **Emission Units: MON Group 2 Storage Tanks and NSPS Subpart Kb Storage Tanks**

Each of the below noted tanks are vented to the atmosphere.

Emission No.	Tank No.	Description
	494-A-07	2,000 Gallon MIBK Storage Tank
	343-A-04	10,000 Gallon Formaldehyde Storage Tank
039d	398-A-33	20,000 Gallon General VOC Storage Tank
039c	398-A-32	20,000 Gallon General VOC Storage Tank
031	398-A-29	10,000 Gallon General VOC Storage Tank
039e	398-A-34	20,000 Gallon General VOC Storage Tank
039f	398-A-35	20,000 Gallon General VOC Storage Tank
039g	398-A-36	20,000 Gallon General VOC Storage Tank
039h	398-A-37	20,000 Gallon General VOC Storage Tank
042	1961-A-211	27,000 Gallon General VOC Storage Tank
043	1961-A-212	27,000 Gallon General VOC Storage Tank
049	398-A-53	20,000 Gallon General VOC Storage Tank
052	398-A-60	20,000 Gallon General VOC Storage Tank
097	4898-A-05	18,000 Gallon General VOC Storage Tank
098	4898-A-06	18,000 Gallon General VOC Storage Tank

#### Emission Standards:

**NSPS Subpart Kb:** (ADEM Admin. Code R 335-3-10-.02(9)(b))

**NESHAP Subpart FFFF:** (ADEM Admin. Code R 335-3-11-.06(83))

**NESHAP Subpart EEEE:** (ADEM Admin. Code R 335-3-11-.06(82))

#### *NSPS Subpart Kb:*

Tank Nos. 398-A-33 and 398-A-32 would be applicable to Subpart Kb. However, because this is an affected source under another MACT Subpart (FFFF), no additional provisos from Subpart Kb would be required.

Tank Nos. 398-A-34, 398-A-35, 398-A-36, 398-A-37, 398-A-53, and 398-A-60 each have a vapor pressure limit of 3.97 psia on the VOLs stored in these vessels such that the control requirements of Subpart Kb would not be required. These tanks would be required to comply with the recordkeeping requirements of 60.116b(a), (b), and (c) of Subpart Kb (capacity, dimensions, VOL stored, period of storage, vapor pressure records). Tank Nos. 1961-A-211 and 1961-A-212 have vapor pressure limits of 0.00321 psia for the VOLs stored in these vessels and therefore would only be required to comply with 60.116b (a) and (b) of Subpart Kb (capacity and dimension recordkeeping requirements).

Tank Nos. 398-A-29, 4898-A-05, 4898-A-06 would not be subject to Subpart Kb since their capacities are less than 75 m<sup>3</sup> (19,815 gallons).

*NESHAP Subpart FFFF:*

Tank Nos. 494-A-07, 343-A-04, 398-A-33, 398-A-32, 1961-A-211, and 1961-A-212 are subject to the requirements of 40 CFR 63, Subpart FFFF because of the products stored. No control equipment will be required for this process. There would be no requirements for this unit, other

than the requirements listed in the General Provisos of the Permit; therefore, no periodic monitoring would be required.

*NESHAP Subpart EEEE:*

Tank Nos. 343-A-04 and 398-A-33 transfer racks would be applicable to Subpart EEEE (National Emission Standards for Hazardous Air Pollutants (NESHAPs): Organic Liquids Distribution (OLD MACT)). However, since the total actual annual facility-level organic liquid loading volume (the volume loaded into tank trucks and rail car) of organic liquids with total OLD MACT organic HAP content of at least 98% is zero, these racks are exempt from the emission limits, operating limits, and work practice standards.

**OPERATING SUMMARY NO. 32**

**Emission Unit 071: Resin Building 74**

The resin line is designed for the batch production of polyethylene terephthalate (PET) from dimethyl terephthalate (DMT) and ethylene glycol. This line also produces polyethylene naphthalate (PEN) from 2,6-naphthalenedicarbonylate (NDC) and ethylene glycol. This line has the capability of making a range of copolymers as well.

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**NESHAP Subpart JJJ:** (ADEM Admin. Code R 335-3-11-.06(61))

*Fuel Burning Equipment:*

This unit utilizes a process heater (19 MMBTU/hr heat capacity) which fires natural gas or liquid propane. This oven is direct fired and therefore the fuel burning state regulations would not be applicable. This oven is also a control device for HAP emissions.

*Particulate/Opacity:*

Particulate emissions are expected from the Building 74 Pellet Transport Group (one hopper and four silos), the Building 74 Raw Material Transport Group (Melter System and Catalyst and Additive Systems), and Building 74 Finished Pellet Transport (Intermediate Storage Hopper). The state opacity requirement and state particulate rate would be applicable to this process.

*VOC:*

VOC emissions from the unit would come from the process heater. The total VOC emission rate from this unit shall not exceed 15.1 lb/hr. An LDAR program shall be followed as referenced in 40 CFR Part 63, Subpart UU.

*HAPs:*

The processes under this unit are flexible operating units. Under the MACTs of 40 CFR Part 63, the subparts require the facility to make primary product determinations to determine applicability. Currently these processes are subject to 40 CFR Part 63, Subpart JJJ. An LDAR program shall be followed as referenced in 40 CFR Part 63, Subpart UU.

The process heater associated with this unit is not subject to 40 CFR 63, Subpart DDDDD, the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters because this process heater is used as a control device to comply with another subpart (JJJ) as referenced in 40 CFR 63.7491(h).

There are also two hot water heaters (2.5 MMBTU/hr each) that are a part of this unit that are also not subject to Subpart DDDDD as referenced in 40 CFR 63.7491(d).

Periodic Monitoring:

*Particulate/Opaicity:*

No periodic monitoring would be necessary for the opacity and particulate standards. This determination was made since very minimal opacity and particulate emissions would be expected. Also any opacity and particulate emissions would only be expected for short durations (i.e., during the addition of the powder raw materials). Furthermore, the

reactor systems are located within a building which should reduce any opacity or particulate to the atmosphere.

*VOCs:*

Periodic monitoring to ensure compliance with the VOC emission limit from these reactor systems would consist of recordkeeping. 3M is required to maintain records of the temperature of the process heater. Also VOC emission testing shall be conducted at intervals not to exceed 3 years.

*HAPs:*

Periodic monitoring for the HAPs in the process heater would not be required since all the batch vent streams are introduced with the primary fuel for the process heater as referenced in 40 CFR 63.1324(c)(3) of Subpart JJJ.

**OPERATING SUMMARY NO. 33**

**Emission Unit: Emergency Generators**

The emergency generators are used at the facility are the D-10 Film Line emergency reciprocating internal combustion engine (RICE) (600 bhp) and the Resin Building 74 emergency reciprocating internal combustion engine (470 bhp).

Emission Standards:

**Visible Emissions:** (ADEM Admin. Code R. 335-3-4-.01)

**Particulate Matter:** (ADEM Admin. Code R 335-3-4-.04(1))

**NESHAP Subpart ZZZZ:** (ADEM Admin. Code R 335-3-11-.06(103))

*Particulate/Opacity:*

The emission points for these generators would be expected to have particulate emissions. The state allowable opacity and particulate limits would be applicable to this unit.

*HAPs:*

The 40 CFR Part 63, Subpart ZZZZ, the NESHAP for Stationary Reciprocating Internal Combustion Engines is applicable for this unit. The D-10 Film Line RICE does not have to meet any of the requirements of Subpart ZZZZ other than the initial notification as referenced in 63.5590(b)(i) and 63.6665 of Subpart ZZZZ. The Resin Building 74 RICE must meet the requirements of Subpart ZZZZ by meeting the requirements of the New Source Performance Standards (NSPS), 40 CFR 60, Subpart IIII as referenced in 63.6590(c) of Subpart ZZZZ. The Resin Building 74 RICE must meet the requirements under the NSPS, Subpart IIII under 60.4202 as referenced in 60.4205(b) of NSPS, Subpart IIII.

Periodic Monitoring:

*Particulate/Opacity:*

No periodic monitoring would be necessary for the opacity and particulate standards. This determination was made since very minimal opacity and particulate emissions would be expected. Also any opacity and particulate emissions would only be expected for short durations from these generators (i.e., emergency use or maintenance).

*HAPs:*

No periodic monitoring would be required for the D-10 Film Line RICE under Subpart ZZZZ since the only requirements of this subpart is the initial notification. The Resin Building 74 RICE must install and operate a non-resettable hour meter as referenced in 60.4209(a) of NSPS, Subpart III.

**Permitting Fees:**

Title V major sources are subject to operating permit fees which charge the facility a yearly amount based on the actual emission rate of pollutants for the previous year.

**Recommendation:**

Based on the renewal application and the monitoring described above, 3M Company should be able to demonstrate compliance for applicable

regulatory requirements. I recommend that the attached permit be issued to 3M Company.

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James H. Adams  
Industrial Chemicals Section  
Chemical Branch  
Air Division

January 12, 2015  
Date